

We claim:

1. A valve engageable with an instrument, said valve comprising: a valve body; a deformable stem located in said valve body and shiftable therein, said stem having an aperture configured such that when the instrument is engaged with said aperture in said stem, said stem shifts within said valve body and said aperture deforms to allow liquid to flow therethrough to or from the instrument; a plug member in said stem, said plug member shiftable to a position of generally sealed engagement with said stem while the instrument is still engaged with said aperture in said stem.

2. A valve as recited in claim 1, wherein said plug member seals off a relatively high pressure area and provides a low pressure area adjacent said aperture thereby reducing a likelihood that fluid will squirt out said stem through said aperture when the instrument is disengaged from said aperture.

3. A valve as recited in claim 1, said stem and said valve body configured such that when the instrument is not engaged with said stem, said valve body engages said stem thereby urging said aperture closed.

4. A valve as recited in claim 1, wherein a portion of said stem is generally conical and facilitates the closing of said aperture in said stem when said valve body engages said stem when the instrument is not engaged with said stem.

5. A valve as recited in claim 1, said stem including a head portion, said head portion contacting said valve body when the instrument is not engaged in said aperture in said stem, said contact between said head portion and said valve body urging said aperture in said stem closed.

6. A valve as recited in claim 1, said stem including a throat portion which contacts

said valve body and provides generally axial compressive resistance when the instrument is engaged with said aperture in said stem.

7. A valve as recited in claim 5, said stem including a throat portion which contacts said valve body and provides generally axial compressive resistance when the instrument is engaged with said aperture in said stem.

8. A valve as recited in claim 6, said throat portion including an end portion which sealably contacts said valve body.

9. A valve as recited in claim 7, said throat portion including an end portion which sealably contacts said valve body.

10. A valve as recited in claim 1, said valve body having stem-engaging structure on an internal surface thereof for engaging said stem when the instrument is not engaged with said aperture in said stem, said stem having valve-body engaging structure for engaging said stem-engaging structure on said valve body.

11. A valve as recited in claim 10, said stem-engaging structure on said valve body comprising a taper, said valve-body engaging structure on said stem comprising at least one contact point which engages said taper when the instrument is not engaged with said aperture in said stem.

12. A valve as recited in claim 1, said stem having an end which has said aperture formed therein, said stem configured such that said end of said stem protrudes past an end of said valve body, thereby exposing said end of said stem when the instrument is not engaged with said aperture in said stem.

13. A valve engageable with an instrument having a tip portion, said valve comprising: a valve body; a deformable stem located in said valve body in a compressed condition and shiftable from a first position, said stem having an aperture configured such that when the instrument tip is engaged with said aperture in said stem, said stem is urged from the first position and said aperture deforms to allow liquid to flow therethrough to or from the instrument; a plug member disposed with a bore in the stem which generally seals with at least a portion of said stem when the valve is pressurized, but is capable of being displaced by said tip to unseat and permit fluid flow, yet will reseal as the instrument tip is being disengaged from said aperture in said stem.

14. A valve as recited in claim 13, wherein a portion of said stem is generally conical and facilitates the closing of said aperture in said stem when said stem is urged into said first position.

15. A valve as recited in claim 13, said stem including a head portion, said head portion contacting said valve body when said stem is urged into said first position, said contact between said head portion and said valve body urging said aperture in said stem closed.

16. A valve as recited in claim 15, said stem including a throat portion which contacts said valve body and provides generally axial compressive resistance when the instrument is engaged with said aperture in said stem and said stem is urged from said first position.

17. A valve as recited in claim 16, said throat portion including an end portion which sealably contacts said valve body.

18. A valve as recited in claim 13, wherein said plug member seals off a relatively high pressure area from said aperture in said stem and provides a low pressure area adjacent said aperture thereby reducing a likelihood that fluid will squirt out said stem through said aperture

when the instrument is disengaged from said aperture in said stem.

19. A valve as recited in claim 13, said stem having an end which has said aperture formed therein, said stem configured such that said end of said stem protrudes past an end of said valve body, thereby exposing said end of said stem when said stem is in said first position.

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

20

25